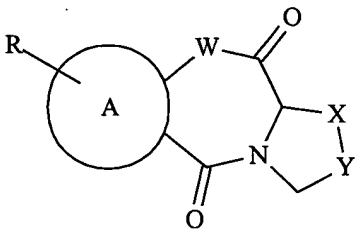
Amendments to the Claims

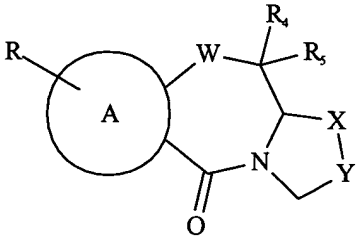
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-28 (canceled)

Claim 29 (currently amended): A compound having the following formula, or a pharmaceutically acceptable salt thereof:





wherein A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;

R is one or more of halogen or NO_2;

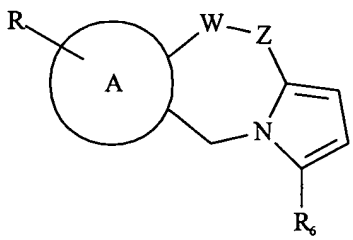
X-Y is CH_2-S, S-CH_2, CH_2-O, CH_2-S(O), S(O)-CH_2, CH_2-CH_2, CH_2-CH_2-CH_2, or CH_2-CH_2-CH_2-CH_2;

R_4 is H or hydroxy;

R_5 is H, phenyl, or alkylamine; and

W is S or O[[.]]

or wherein the compound is



wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline; and

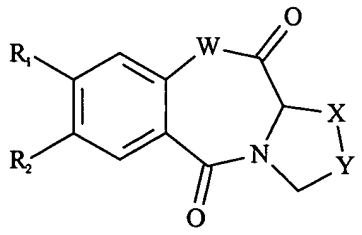
R is one or more of halogen or NO_2;

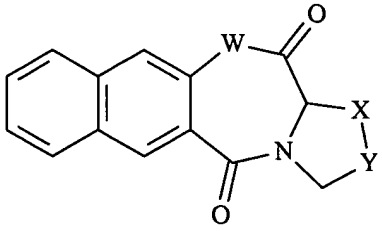
R_6 is H, substituted or unsubstituted alkyl or amine;

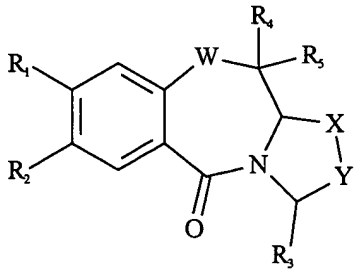
W is S or O; and

Z is S, O, CH_2, CH_2CH_2, or C=O.

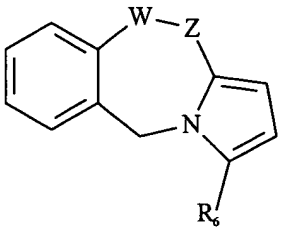
Claim 30 (original): A compound having the following formula, or a pharmaceutically acceptable salt thereof, wherein the compound is:







or



wherein

X-Y is S-CH_2, CH_2-S, S(O)-CH_2, CH_2-S(O), or CH_2CH_2;

W is S or O;

R_1 is H or NO_2;

R_2 is H, halogen, lower alkyl or lower alkoxy;

R_3 is H;

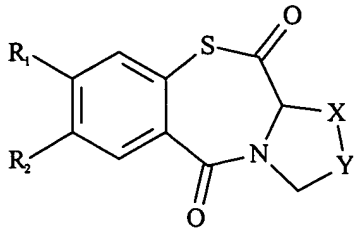
R_4 is hydroxy or H;

R_5 is phenyl or $N(CH_2CH_2)_2NCH_3$; and

R_6 is $CH_2N(CH_2CH_2)_2NCH_3$,

provided that R_1 and R_2 are not both H or not both alkoxy.

Claim 31 (original): The compound of claim 30, wherein the compound is



and R_1 is H or NO_2;

R_2 is H, halogen, lower alkyl or lower alkoxy;

provided that R_1 and R_2 are not both H or not both alkoxy.

Claim 32 (original): The compound of claim 30, wherein

R_1 is H, R_2 is Cl, X-Y is S-CH_2; or

R_1 is H, R_2 is Br, X-Y is S-CH_2; or

R_1 is H, R_2 is CH_3, X-Y is S-CH_2; or

R_1 is H, R_2 is H, X-Y is CH_2-S; or

R_1 is H, R_2 is Cl, X-Y is CH_2-S; or

R_1 is H, R_2 is Br, X-Y is CH_2-S; or

R_1 is H, R_2 is CH_3, X-Y is CH_2-S; or

R_1 is NO_2, R_2 is H, X-Y is CH_2-S; or

R_1 is H, R_2 is OCH_3, X-Y is CH_2-S; or

R_1 is H, R_2 is H, X-Y is CH_2-O; or

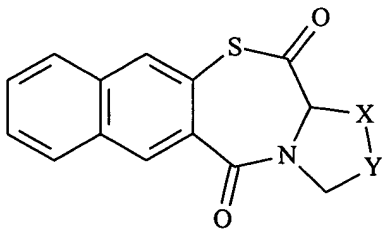
R_1 is H, R_2 is CH_3, X-Y is S(O)-CH_2; or

R_1 is H, R_2 is H, X-Y is CH_2-S(O); or

R_1 is H, R_2 is Cl, X-Y is CH_2-S(O); or

R_1 is H, R_2 is OCH_3, X-Y is CH_2-S(O).

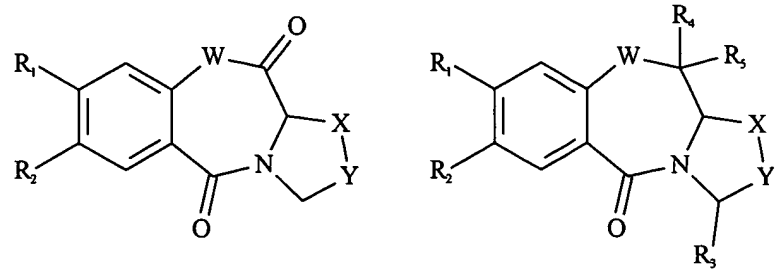
Claim 33 (original): The compound of claim 30, wherein the compound is



and X-Y is S-CH_2 or CH_2-S.

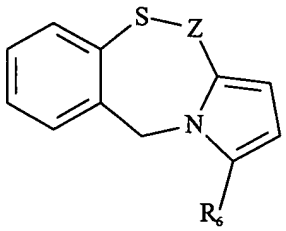
Claim 34 (original): The compound of claim 30, wherein X-Y is S-CH_2.

Claim 35 (original): The compound of claim 30, wherein the compound is:



and R_1, R_2 and R_3 are H, R_4 is OH or H;
R_5 is Ph or $N(CH_2CH_2)_2CH_3$; and
X-Y is CH_2-CH_2.

Claim 36 (original): The compound of claim 30, wherein the compound is



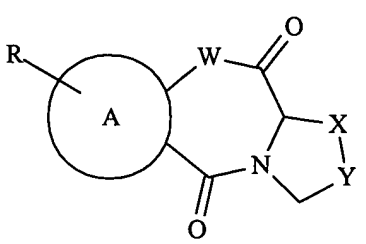
and R_6 is $CH_2N(CH_2CH_2)_2NCH_3$.

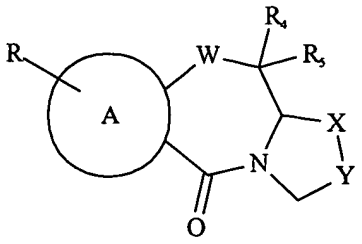
Claim 37 (original): A pharmaceutical composition comprising the compound of claim 29, or the pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier.

Claim 38 (original): A pharmaceutical composition comprising the compound of claim 30, or the pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier.

Claims 39-45 (canceled)

Claim 46 (new): A method of inhibiting a HIV integrase, the method comprising:
exposing the integrase to an integrase inhibiting amount of one or more anti-integrase compounds selected from the group consisting of the following compounds, or pharmaceutically acceptable salts thereof:





wherein A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;

R is one or more of halogen or NO_2;

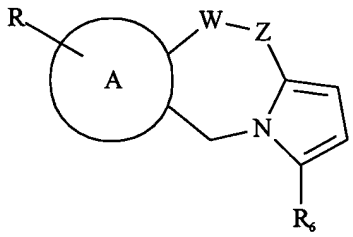
X-Y is CH_2-S, S-CH_2, CH_2-O, CH_2-S(O), S(O)-CH_2, CH_2-CH_2, CH_2-CH_2-CH_2, or CH_2-CH_2-CH_2-CH_2;

R_4 is H or hydroxy;

R_5 is H, phenyl, or alkylamine; and

W is S or O

or wherein the compound is



wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline; and

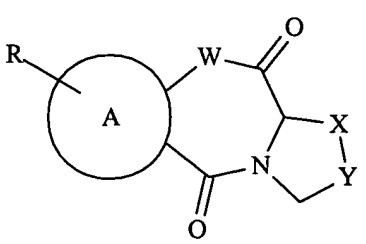
R is one or more of halogen or NO_2;

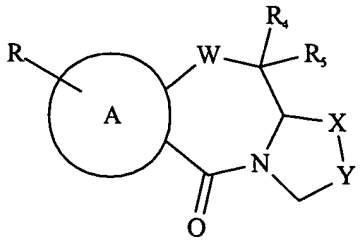
R_6 is H, substituted or unsubstituted alkyl or amine;

W is S or O; and

Z is S, O, CH_2, CH_2CH_2, or C=O.

Claim 47 (new): A method of treating HIV infection in a subject, comprising administering to the subject a therapeutically effective amount of a compound selected from the group consisting of:





wherein A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;

R is one or more of halogen or NO_2;

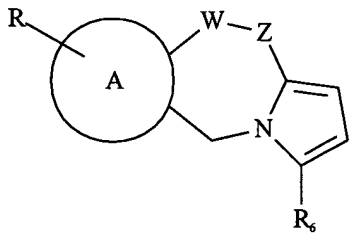
X-Y is CH_2-S, S-CH_2, CH_2-O, CH_2-S(O), S(O)-CH_2, CH_2-CH_2, CH_2-CH_2-CH_2, or CH_2-CH_2-CH_2-CH_2;

R_4 is H or hydroxy;

R_5 is H, phenyl, or alkylamine; and

W is S or O

or wherein the compound is



wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline; and

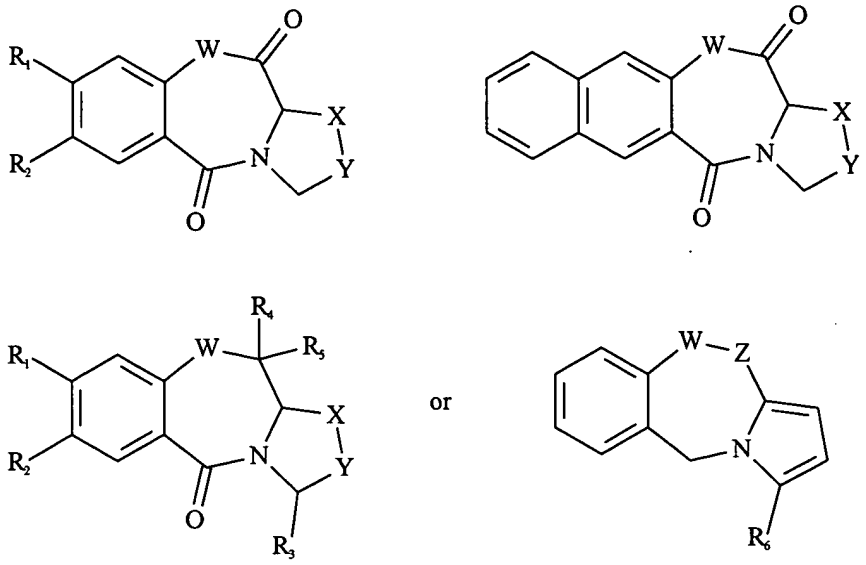
R is one or more of halogen or NO_2;

R_6 is H, substituted or unsubstituted alkyl or amine;

W is S or O; and

Z is S, O, CH_2, CH_2CH_2, or C=O.

Claim 48 (new): A method of inhibiting a HIV integrase, the method comprising:
exposing the integrase to an integrase inhibiting amount of one or more anti-integrase compounds selected from the group consisting of the following compounds, or pharmaceutically acceptable salts thereof:



wherein

X-Y is S-CH_2, CH_2-S, S(O)-CH_2, CH_2-S(O), or CH_2CH_2;

W is S or O;

R_1 is H or NO_2;

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R_2 is H, halogen, lower alkyl or lower alkoxy;

R_3 is H;

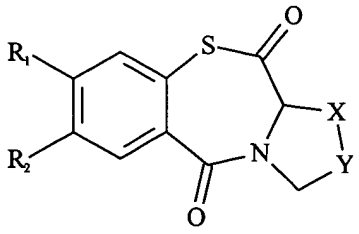
R_4 is hydroxy or H;

R_5 is phenyl or $N(CH_2CH_2)_2NCH_3$; and

R_6 is $CH_2N(CH_2CH_2)_2NCH_3$,

provided that R_1 and R_2 are not both H or not both alkoxy.

Claim 49 (new): The method of claim 48, wherein the compound is



and R_1 is H or NO_2;

R_2 is H, halogen, lower alkyl or lower alkoxy;

provided that R_1 and R_2 are not both H or not both alkoxy.

Claim 50 (new): The method of claim 48, wherein

R_1 is H, R_2 is Cl, X-Y is S-CH_2; or

R_1 is H, R_2 is Br, X-Y is S-CH_2; or

R_1 is H, R_2 is CH_3, X-Y is S-CH_2; or

R_1 is H, R_2 is H, X-Y is CH_2-S; or

R_1 is H, R_2 is Cl, X-Y is CH_2-S; or

R_1 is H, R_2 is Br, X-Y is CH_2-S; or

R_1 is H, R_2 is CH_3, X-Y is CH_2-S; or

R_1 is NO_2, R_2 is H, X-Y is CH_2-S; or

R_1 is H, R_2 is OCH_3, X-Y is CH_2-S; or

R_1 is H, R_2 is H, X-Y is CH_2-O; or

R_1 is H, R_2 is CH_3, X-Y is S(O)-CH_2; or

R_1 is H, R_2 is H, X-Y is CH_2-S(O); or

R_1 is H, R_2 is Cl, X-Y is CH_2-S(O); or

R_1 is H, R_2 is OCH_3, X-Y is CH_2-S(O).

Claim 51 (new): The method of claim 48, wherein the compound is

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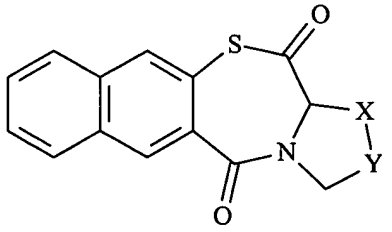
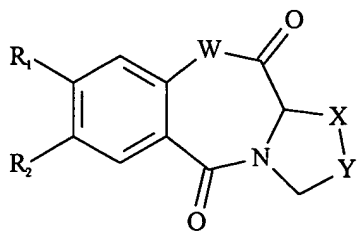
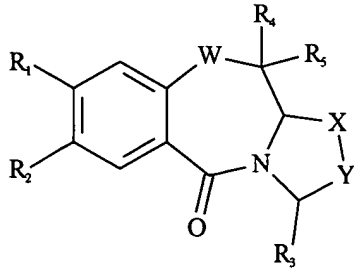


and X-Y is S-CH_2 or CH_2-S.

Claim 52 (new): The method of claim 48, wherein X-Y is S-CH_2.

Claim 53 (new): The method of claim 48, wherein the compound is:



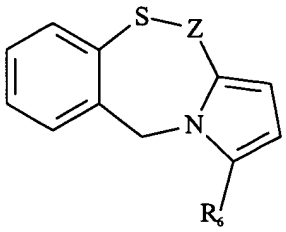


and R_1, R_2 and R_3 are H, R_4 is OH or H;

R_5 is Ph or $N(CH_2CH_2)_2CH_3$; and

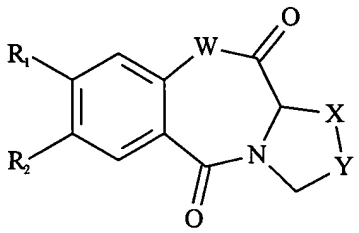
X-Y is CH_2-CH_2.

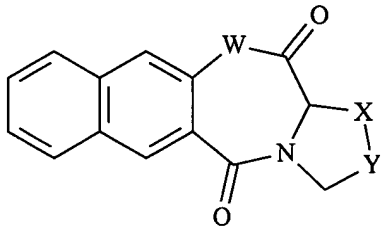
Claim 54 (new): The method of claim 48, wherein the compound is

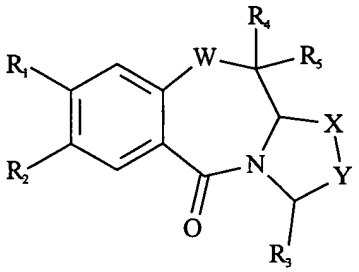


and R_6 is $CH_2N(CH_2CH_2)_2NCH_3$.

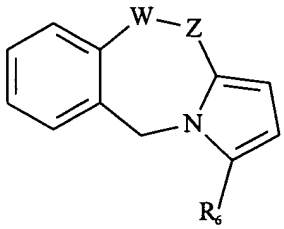
Claim 55 (new): A method of treating HIV infection in a subject, comprising administering to the subject a therapeutically effective amount of a compound selected from the group consisting of:







or



wherein

X-Y is S-CH_2, CH_2-S, S(O)-CH_2, CH_2-S(O), or CH_2CH_2;

W is S or O;

R_1 is H or NO_2;

R_2 is H, halogen, lower alkyl or lower alkoxy;

R_3 is H;

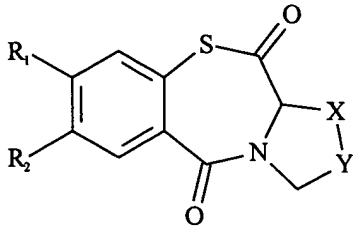
R_4 is hydroxy or H;

R_5 is phenyl or $N(CH_2CH_2)_2NCH_3$; and

R_6 is $CH_2N(CH_2CH_2)_2NCH_3$,

provided that R_1 and R_2 are not both H or not both alkoxy.

Claim 56 (new): The method of claim 55, wherein the compound is



and R_1 is H or NO_2;

R_2 is H, halogen, lower alkyl or lower alkoxy;

provided that R_1 and R_2 are not both H or not both alkoxy.

Claim 57 (new): The method of claim 55, wherein

R_1 is H, R_2 is Cl, X-Y is $S\text{-}CH_2$; or

R_1 is H, R_2 is Br, X-Y is $S\text{-}CH_2$; or

R_1 is H, R_2 is CH_3, X-Y is $S\text{-}CH_2$; or

R_1 is H, R_2 is H, X-Y is $CH_2\text{-}S$; or

R_1 is H, R_2 is Cl, X-Y is $CH_2\text{-}S$; or

R_1 is H, R_2 is Br, X-Y is $CH_2\text{-}S$; or

R_1 is H, R_2 is CH_3, X-Y is $CH_2\text{-}S$; or

R_1 is NO_2, R_2 is H, X-Y is $CH_2\text{-}S$; or

R_1 is H, R_2 is OCH_3, X-Y is $CH_2\text{-}S$; or

R_1 is H, R_2 is H, X-Y is $CH_2\text{-}O$; or

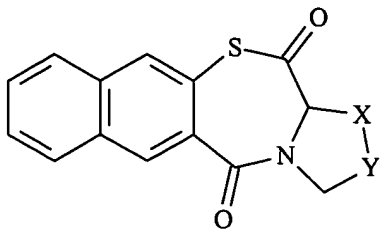
R_1 is H, R_2 is CH_3, X-Y is $S(O)\text{-}CH_2$; or

R_1 is H, R_2 is H, X-Y is $CH_2\text{-}S(O)$; or

R_1 is H, R_2 is Cl, X-Y is $CH_2\text{-}S(O)$; or

R_1 is H, R_2 is OCH_3, X-Y is $CH_2\text{-}S(O)$.

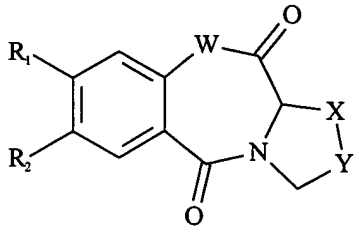
Claim 58 (new): The method of claim 55, wherein the compound is

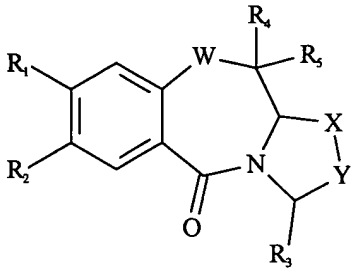


and X-Y is S-CH_2 or CH_2-S.

Claim 59 (new): The method of claim 55, wherein X-Y is S-CH_2.

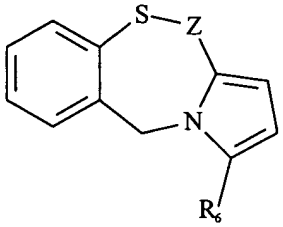
Claim 60 (new): The method of claim 55, wherein the compound is:





and R_1, R_2 and R_3 are H, R_4 is OH or H;
R_5 is Ph or $N(CH_2CH_2)_2CH_3$; and
X-Y is CH_2-CH_2.

Claim 61 (new): The method of claim 55, wherein the compound is



and R_6 is $CH_2N(CH_2CH_2)_2NCH_3$.